2.88 Working Backwards with Inverse Operations: 30-minute Pack

Total Marks

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Megan spends two thirds of their money, then spends a quarter of what is left, then spends £5. Megan has £100 left. How much did Megan have at the start?

- ☐ A) £420
- ☐ B) £105
- ☐ C) £200
- ☐ D) £419
- ☐ E) £205

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2 A machine does this to a number: multiply by 6, then subtract 5. The output is 187. What was the input?

- ☐ A) 1,117
- ☐ B) 33
- ☐ C) 38
- ☐ D) 31
- ☐ E) 32

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3 Niamh spends two thirds of their money, then spends £12, then spends £14. Niamh has £134 left. How much did Niamh have at the start?

- ☐ A) £492
- ☐ B) £481
- ☐ C) £160
- ☐ D) £480
- ☐ E) £294

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4 Sienna spends a sixth of their money, then spends half of what is left, then spends £14. Sienna has £91 left. How much did Sienna have at the start?

- [ ] A) £196.00
- [ ] B) £105.00
- [ ] C) £182.00
- [ ] D) £253.00
- [ ] E) £252.00

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5 I think of a number and then multiply by 9, then subtract 4. The result is 347. What was my number?

- [ ] A) 40
- [ ] B) 39
- [ ] C) 38
- [ ] D) 3,119
- [ ] E) 48

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6 Ravi spends a sixth of their money, then spends £13. Ravi has £267 left. How much did Ravi have at the start?

- [ ] A) £336.00
- [ ] B) £280.00
- [ ] C) £547.00
- [ ] D) £324.00
- [ ] E) £324.50

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7 Sienna spends half of their money, then spends a sixth of what is left, then spends £4. Sienna has £16 left. How much did Sienna have at the start?

- [ ] A) £48.00
- [ ] B) £47.00
- [ ] C) £20.00
- [ ] D) £49.00
- [ ] E) £36.00

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8 A machine does this to a number: subtract 11, then add 12. The output is 9. What was the input?

- [ ] A) 7
- [ ] B) 20
- [ ] C) 9
- [ ] D) 8
- [ ] E) 10

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9 Jack spends half of their money, then spends £5. Jack has £49 left. How much did Jack have at the start?

- [ ] A) £103.00
- [ ] B) £120.00
- [ ] C) £108.00
- [ ] D) £78.50
- [ ] E) £54.00

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10 Harry spends a third of their money, then spends £15. Harry has £81 left. How much did Harry have at the start?

- [ ] A) £177.00
- [ ] B) £156.00
- [ ] C) £96.00
- [ ] D) £162.00
- [ ] E) £144.00

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11 I think of a number and then multiply by 7, then subtract 3, then add 11. The result is 197. What was my number?

- [ ] A) 27
- [ ] B) 26
- [ ] C) 34
- [ ] D) 1,387
- [ ] E) 28

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12 Kofi spends a third of their money, then spends £8, then spends £5. Kofi has £139 left. How much did Kofi have at the start?

- [ ] A) £152.00
- [ ] B) £240.00
- [ ] C) £228.00
- [ ] D) £216.00
- [ ] E) £291.00

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13 A machine does this to a number: subtract 15, then multiply by 9. The output is 27. What was the input?

- [ ] A) 17
- [ ] B) 18
- [ ] C) 33
- [ ] D) 42
- [ ] E) 108

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14 Ravi spends a quarter of their money, then spends two thirds of what is left, then spends £14. Ravi has £37 left. How much did Ravi have at the start?

- [ ] A) £88.00
- [ ] B) £51.00
- [ ] C) £216.00
- [ ] D) £204.00
- [ ] E) £192.00

---

15 I think of a number and then subtract 11, then add 10, then multiply by 4. The result is 64. What was my number?

- [ ] A) 65
- [ ] B) 252
- [ ] C) 18
- [ ] D) 16
- [ ] E) 17

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16 Amara spends a third of their money, then spends £3. Amara has £37 left. How much did Amara have at the start?

- [ ] A) £61
- [ ] B) £40
- [ ] C) £48
- [ ] D) £60
- [ ] E) £77

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17 Leo spends a quarter of their money, then spends £3, then spends £9. Leo has £132 left. How much did Leo have at the start?

- [ ] A) £192.00
- [ ] B) £276.00
- [ ] C) £177.00
- [ ] D) £144.00
- [ ] E) £204.00

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18 A machine does this to a number: subtract 4, then multiply by 9. The output is 117. What was the input?

- [ ] A) 21
- [ ] B) 17
- [ ] C) 121
- [ ] D) 1,017
- [ ] E) 16

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19 Ethan spends half of their money, then spends £3, then spends £15. Ethan has £120 left. How much did Ethan have at the start?

- [ ] A) £276.00
- [ ] B) £264.00
- [ ] C) £258.00
- [ ] D) £277.00
- [ ] E) £138.00

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20 Oliver spends a sixth of their money, then spends £13, then spends £13. Oliver has £194 left. How much did Oliver have at the start?

- [ ] A) £414.00
- [ ] B) £264.00
- [ ] C) £263.00
- [ ] D) £220.00
- [ ] E) £265.00

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21 A machine does this to a number: add 11, then subtract 3. The output is 11. What was the input?

- [ ] A) 14
- [ ] B) 19
- [ ] C) 2
- [ ] D) 3
- [ ] E) 0

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22 Tariq spends £2, then spends half of what is left. Tariq has £53 left. How much did Tariq have at the start?

- [ ] A) £107.00
- [ ] B) £109.00
- [ ] C) £108.00
- [ ] D) £81.50
- [ ] E) £55.00

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23 Dylan spends two thirds of their money, then spends half of what is left, then spends £14. Dylan has £62 left. How much did Dylan have at the start?

- [ ] A) £138.00
- [ ] B) £76.00
- [ ] C) £124.00
- [ ] D) £455.00
- [ ] E) £456.00

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24 I think of a number and then multiply by 2, then subtract 3. The result is 19. What was my number?

- [ ] A) 35
- [ ] B) 13
- [ ] C) 11
- [ ] D) 10
- [ ] E) 12

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25 Oliver spends £8, then spends £7, then spends two thirds of what is left. Oliver has £55 left. How much did Oliver have at the start?

- [ ] A) £180
- [ ] B) £70
- [ ] C) £179
- [ ] D) £181
- [ ] E) £125

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26 A machine does this to a number: add 3, then multiply by 9. The output is 243. What was the input?

- [ ] A) 2,214
- [ ] B) 27
- [ ] C) 240
- [ ] D) 24
- [ ] E) 25

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27 Yusuf spends a sixth of their money, then spends £8, then spends £3. Yusuf has £59 left. How much did Yusuf have at the start?

- [ ] A) £118.00
- [ ] B) £96.00
- [ ] C) £70.00
- [ ] D) £129.00
- [ ] E) £84.00

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28 A machine does this to a number: add 7, then multiply by 6, then subtract 11. The output is 175. What was the input?

- [ ] A) 24
- [ ] B) 39
- [ ] C) 1,081
- [ ] D) 31
- [ ] E) 23

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29 Fatima spends a third of their money, then spends £2, then spends £15. Fatima has £303 left. How much did Fatima have at the start?

- [ ] A) £468
- [ ] B) £480
- [ ] C) £320
- [ ] D) £623
- [ ] E) £479

---

30 Poppy spends £6, then spends two thirds of what is left. Poppy has £18 left. How much did Poppy have at the start?

- [ ] A) £24
- [ ] B) £36
- [ ] C) £42
- [ ] D) £60
- [ ] E) £48

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31 I think of a number and then subtract 5, then add 9, then divide by 2. The result is 17. What was my number?

- [ ] A) 35
- [ ] B) 30
- [ ] C) 29
- [ ] D) 13
- [ ] E) 26

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32 Anya spends £12, then spends a sixth of what is left. Anya has £160 left. How much did Anya have at the start?

- [ ] A) £172.00
- [ ] B) £332.00
- [ ] C) £192.00
- [ ] D) £204.00
- [ ] E) £205.00

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Mark scheme · 2.88 Working Backwards with Inverse Operations: 30-minute Pack

Question 1

correct option A (£420) cao **B1**

Answer: A) £420

Question 2

correct option E (32) cao **B1**

Answer: E) 32

Question 3

correct option D (£480) cao **B1**

Answer: D) £480

Question 4

correct option E (£252.00) cao **B1**

Answer: E) £252.00

Question 5

correct option B (39) cao **B1**

Answer: B) 39

Question 6

correct option A (£336.00) cao **B1**

Answer: A) £336.00

Question 7

correct option A (£48.00) cao **B1**

Answer: A) £48.00

Question 8

correct option D (8) cao **B1**

Answer: D) 8

Question 9

correct option C (£108.00) cao **B1**

Answer: C) £108.00

Question 10

correct option E (£144.00) cao **B1**

Answer: E) £144.00

Question 11

correct option A (27) cao **B1**

Answer: A) 27

Question 12

correct option C (£228.00) cao **B1**

Answer: C) £228.00

Question 13

correct option B (18) cao **B1**

Answer: B) 18

Question 14

correct option D (£204.00) cao **B1**

Answer: D) £204.00

Question 15

correct option E (17) cao **B1**

Answer: E) 17

Question 16

correct option D (£60) cao **B1**

Answer: D) £60

Question 17

correct option A (£192.00) cao **B1**

Answer: A) £192.00

Question 18

correct option B (17) cao **B1**

Answer: B) 17

Question 19

correct option A (£276.00) cao **B1**

Answer: A) £276.00

Question 20

correct option B (£264.00) cao **B1**

Answer: B) £264.00

Question 21

correct option D (3) cao **B1**

Answer: D) 3

Question 22

correct option C (£108.00) cao **B1**

Answer: C) £108.00

Question 23

correct option E (£456.00) cao **B1**

Answer: E) £456.00

Question 24

correct option C (11) cao **B1**

Answer: C) 11

Question 25

correct option A (£180) cao **B1**

Answer: A) £180

Question 26

correct option D (24) cao **B1**

Answer: D) 24

Question 27

correct option E (£84.00) cao **B1**

Answer: E) £84.00

Question 28

correct option A (24) cao **B1**

Answer: A) 24

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Question 29

correct option B (£480) cao **B1**

Answer: B) £480

Question 30

correct option D (£60) cao **B1**

Answer: D) £60

Question 31

correct option B (30) cao **B1**

Answer: B) 30

Question 32

correct option D (£204.00) cao **B1**

Answer: D) £204.00

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